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10/608,888	06/26/2003	Eran Steinberg	FN102-C	7816
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JACKSON & CO., LLP 6114 LA SALLE AVENUE #507 OAKLAND, CA 94611-2802			MADDEN, GREGORY VINCENT	
			ART UNIT	PAPER NUMBER
			2622	
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			10/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/608,888	Applicant(s) STEINBERG ET AL.	
	Examiner Gregory V. Madden	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 13, 15, 17-19, 21-23, 25-34, 36, 37, 39, 41-43 and 45-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-19, 21-23, 41-43 and 45-47 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-10, 12-13, 25-31, 33-34, and 36 is/are rejected.
- 7) ☒ Claim(s) 8, 13, 15, 32, 37 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 13, 2007 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 2-3, 12-13, 15, 25, 26-28, 36-37, and 39 have been considered but are moot in view of the new ground(s) of rejection.

In regard to claim 1, the Applicant argues that the Ray reference (U.S. Pat. 6,940,545) fails to teach using a weighted average and an estimated importance of detected regions based on size of faces and/or relative exposure of faces. The Applicant's arguments are considered moot, however, in view of a new ground of rejection citing Ray in view of Needham et al. (U.S. Pub. 2002/0181801). Please refer to the rejection to the claim set forth below, along with the new ground of rejection for claims 2-3, 12, 25, 26-28, and 36.

Applicant's arguments with respect to claims 17-19, 21-23, 41-43, and 45-47 have been fully considered and are persuasive. The rejection of claims 17-19, 21-23, 41-43, and 45-47 has thus been withdrawn.

Finally, in regard to claims 4-10 and 28-34, the Applicant argues that neither the Ray nor the Sannoh reference (U.S. Pub. 2003/0071908) teaches the manual removal of an indication as a face of at least one of the plurality of groups of pixels detected as a face. The Applicant's arguments are considered

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moot, however, in view of a new ground of rejection citing Ray in view of Fujimoto et al. (U.S. Pat. 6,035,074). Please refer to the rejection to the claims 4-7, 9-10 and 28-31, and 34 set forth below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 25 recite the limitation "...calculating a weighted average on the individual objects of said groups..." in section c of the respective claims. There is insufficient antecedent basis for this limitation in the claim. There is no indication in the claims as to what "the individual objects" of the groups are considered to be, and therefore no indication as to what the calculation of the weighted average is based on. For examination purposes only, the Examiner is considering "the individual objects" of the groups of pixels to be the pixels themselves. Please see a substantive rejection on the merits of claims 1 and 25 set forth below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al. (U.S. Pat. 6,940,545) in view of Needham et al. (U.S. Pub. 2002/0181801).

First, in regard to **claim 1**, the Ray reference teaches a method within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, the method for perfecting the auto focus mechanism of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face (when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. Further, Ray teaches that the performing of the auto focus on the plurality of groups is done by calculating a weighted average on the individual objects (i.e. pixels) of the groups (specifically shown Col. 14, Lines 1-11 and Col. 18, Lines 24-35). Ray also teaches that the identifying of face pixels is automatically performed by an image processing apparatus (CPU 30) which receives a relative value as to an estimated importance of the detected regions (referred to as the Component S, as is set forth in Col. 14, Line 12 – Col. 15, Line 6), wherein the largest face in the scene can be determined to be the face region of highest importance. Please refer to Figs. 1-3, Col. 4, Lines 15-66, Col. 6, Line 57 – Col. 7, Line 44, and Col. 11, Line 7 – Col. 14, Line 11. What Ray fails to specifically disclose, however, is that the estimated importance of the detected face regions is based on at least one parameter including size of the faces and/or relative exposure of the faces. However, noting the Needham reference, Needham teaches a method for correcting an image, wherein a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image are identified (by automatic feature detection unit 250), and the estimated importance of the detected face regions is based on at least the size of said faces (determined by feature weights 230), as is taught in Fig. 2 and Paras. [0021-0027]. It would have been obvious to one of

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ordinary skill in the art to have incorporated the determination of estimated importance of a detected face region based on the size of the face, as taught by Needham, with the face detection of Ray. One would have been motivated to do so because as Ray teaches Col. 7, Lines 42-44 and Needham teaches in Para. [0021], the largest face in the scene is generally the primary subject of the scene, and thus by weighting the detected faces based upon the size of the faces, the auto focus can be performed on the group of pixels that most likely represents the primary subject, i.e. the largest face in the scene.

In regard to **claim 2**, the limitations of claim 1 are set forth above, and the Ray reference further discloses that the method further comprises initially performing auto focus on the entire image capture (in image capture during framing mode), as taught in Col. 6, Line 57 – Col. 7, Line 22.

As for **claim 3**, again the limitations of claim 1 are taught above, and Ray teaches that the method for auto focusing the lens and the automatic adjusting automatically adjusts one or more properties of the adjustable optical system (optical section 21), as taught in Col. 7, Lines 36-44.

Considering **claim 4**, the limitations of claim 1 are taught above, and the Ray reference teaches that the user manually activates the camera to perform the perfecting of the auto focus, as is taught in Col. 7, Lines 5-44.

Next, in regard to **claim 25**, as is similarly shown with respect to claim 1 above, Ray teaches a teaches a method within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, one or more processor readable storage devices (RAM 42 and ROM 44) having processor readable code embodied thereon, the processor readable code for programming one or more processors (CPU 30) to perform a method of perfecting the auto focus mechanism as part of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face (when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image

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attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. Further, Ray teaches that the performing of the auto focus on the plurality of groups is done by calculating a weighted average on the individual objects of the groups (specifically shown Col. 14, Lines 1-11). Ray also teaches that the identifying of face pixels is automatically performed by an image processing apparatus (CPU 30) which receives a relative value as to an estimated importance of the detected regions (referred to as the Component S, as is set forth in Col. 14, Line 12 – Col. 15, Line 6), wherein the largest face in the scene can be determined to be the face region of highest importance. Please refer to Figs. 1-3, Col. 4, Lines 15-66, Col. 6, Line 57 – Col. 7, Line 44, and Col. 11, Line 7 – Col. 14, Line 11. What Ray fails to specifically disclose, however, is that the estimated importance of the detected face regions is based on at least one parameter including size of the faces and/or relative exposure of the faces. However, noting the Needham reference, Needham teaches a method for correcting an image, wherein a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image are identified (by automatic feature detection unit 250), and the estimated importance of the detected face regions is based on at least the size of said faces (determined by feature weights 230), as is taught in Fig. 2 and Paras. [0021-0027]. It would have been obvious to one of ordinary skill in the art to have incorporated the determination of estimated importance of a detected face region based on the size of the face, as taught by Needham, with the face detection of Ray. One would have been motivated to do so because as Ray teaches Col. 7, Lines 42-44 and Needham teaches in Para. [0021], the largest face in the scene is generally the primary subject of the scene, and thus by weighting the detected faces based upon the size of the faces, the auto focus can be performed on the group of pixels that most likely represents the primary subject, i.e. the largest face in the scene.

In regard to **claim 26**, the limitations of claim 25 are set forth above, and the Ray reference further discloses that the method further comprising initially performing auto focus on the entire image capture (in image capture during framing mode), as taught in Col. 6, Line 57 – Col. 7, Line 22.

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As for **claim 27**, again the limitations of claim 25 are taught above, and Ray teaches that the method for auto focusing the lens and the automatic adjusting automatically adjusts one or more properties of the adjustable optical system (optical section 21), as taught in Col. 7, Lines 36-44.

Considering **claim 28**, the limitations of claim 25 are taught above, and the Ray reference teaches that the user manually activates the camera to perform the perfecting of the auto focus, as is taught in Col. 7, Lines 5-44.

Claims 5-7, 9-10, 12, 29-31, 33-34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al. (U.S. Pat. 6,940,545) in view of Fujimoto et al. (U.S. Pat. 6,035,074).

As for **claim 5**, the Ray reference teaches a method within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, the method for perfecting the auto focus mechanism of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face (when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. While the Ray reference does teach that the method comprises manually adding an indication of another face within the image, as taught in Col. 5, Lines 6-62, and Col. 7, Lines 2-21, Ray is silent in regard to manually removing one or more of the plurality of groups of pixels that correspond to the indication of a face. However, noting the Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col.

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12, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual removal of a plurality of groups of pixels that correspond to the indication of a face, as taught by Fujimoto, with the image capture process using face detection, as done by Ray. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces, or objects, which they wish to adjust. Thus, the user has more control over the auto focusing mechanism and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

As for **claim 6**, the limitations of claim 5 are taught above, and while neither Ray nor Fujimoto expressly state that the method of manually removing a detected face is performed in response to false detection of regions as faces, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the auto focusing completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

Considering **claim 7**, again the limitations of claim 5 are taught above, and the Fujimoto reference discloses that the manual removal of one or more detected faces is performed in response to a determination to concentrate on less of the image faces (i.e. not to concentrate only on the largest face in the scene, or to concentrate only on the largest face in the scene) than faces identified in the identifying. Please refer again to Col. 11, Line 46 – Col. 12, Line 45.

In regard to **claim 9**, the limitations of claim 5 are taught above, and Fujimoto teaches that the method of manually removing a detected face is performed by an interactive visual method, via the transparent tablet 2-2 operated by user touch. See Col. 9, Lines 23-31.

As for **claim 10**, again the limitations of claim 9 are taught above, and Fujimoto discloses that the method is performed using an image acquisition built-in display (transparent tablet 2-2), as taught in Col. 9, Lines 23-31 and Fig. 2.

Considering **claim 12**, the limitations of claim 1 are taught above, and the Ray reference teaches a method of automatically identifying a face in image via CPU 30, wherein a relative value as to a detection assurance (referred to as Component W) is received by the image processing apparatus (CPU 30) (See Col. 7, Lines 58-62 and Col. 11, Lines 8-67).

Next, as for **claim 29**, the Ray reference teaches a method using processor readable storage devices having processor readable code embodied thereon within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, the method for perfecting the auto focus mechanism of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face (when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. While the Ray reference does teach that the method comprises manually adding an indication of another face within the image, as taught in Col. 5, Lines 6-62, and Col. 7, Lines 2-21, Ray is silent in regard to manually removing one or more of the plurality of groups of pixels that correspond to the indication of a face. However, noting the Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was

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made to have incorporated the manual removal of a plurality of groups of pixels that correspond to the indication of a face, as taught by Fujimoto, with the image capture process using face detection, as done by Ray. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces, or objects, which they wish to adjust. Thus, the user has more control over the auto focusing mechanism and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

As for **claim 30**, the limitations of claim 29 are taught above, and while neither Ray nor Fujimoto expressly state that the method of manually removing a detected face is performed in response to false detection of regions as faces, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the auto focusing completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

Considering **claim 31**, again the limitations of claim 29 are taught above, and the Fujimoto reference discloses that the manual removal of one or more detected faces is performed in response to a determination to concentrate on less of the image faces (i.e. not to concentrate only on the largest face in the scene, or to concentrate only on the largest face in the scene) than faces identified in the identifying. Please refer again to Col. 11, Line 46 – Col. 12, Line 45.

In regard to **claim 33**, the limitations of claim 29 are taught above, and Fujimoto teaches that the method of manually removing a detected face is performed by an interactive visual method, via the transparent tablet 2-2 operated by user touch. See Col. 9, Lines 23-31.

As for **claim 34**, again the limitations of claim 33 are taught above, and Fujimoto discloses that the method is performed using an image acquisition built-in display (transparent tablet 2-2), as taught in Col. 9, Lines 23-31 and Fig. 2.

Finally, considering **claim 36**, the limitations of claim 25 are taught above, and the Ray reference teaches a method of automatically identifying a face in image via CPU 30, wherein a relative value as to a detection assurance (referred to as Component W) is received by the image processing apparatus (CPU 30) (See Col. 7, Lines 58-62 and Col. 11, Lines 8-67).

Allowable Subject Matter

Claims 8, 13, 15, 32, 37, and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In regard to claims 8 and 32, the prior art was not found to teach or reasonably suggest, in view of and in combination with the respective independent claims, a method of manually removing one or more detected faces in an image by increasing a sensitivity level of the face identifying.

As for claims 13 and 37, the prior art was not found to teach or reasonably suggest, in view of and in combination with the respective independent claims, that the calculating of the weighted average is done based on the relative values as to the detection assurance.

Regarding claims 15 and 39, the prior art was not found to teach or reasonably suggest, in view of and in combination with the respective independent claims, that the calculating of the weighted average is done based on the relative values as to the estimated importance.

Claims 17-19, 21-23, 41-43, and 45-47 are allowed.

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The following is an examiner's statement of reasons for allowance:

Considering claims 17, 21, 41, and 45, the prior art was not found to teach or reasonably suggest that values of one or more parameters of the pixels of the group of pixels are adjusted based upon a comparison of an initial parameter with the desired parameter, wherein the parameters of pixels of the group of pixels comprises a location of the face within the digitally-detected image.

As for claims 18-19, 22-23, 42-43, and 46-47, these claims depend from allowable independent claims 17, 21, 41, and 45, respectively, and thus the dependent claims are also considered to be allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Chen et al. (U.S. Pat. 6,965,684)

Suh (U.S. Pat. 6,977,687)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
October 3, 2007



NGOC-YEN VU
SUPERVISORY PATENT EXAMINER